

REMARKS

Claims 1, 7, 8 and 10, 11, 15 and 16 are pending in the application, of which Claims 1, 8, 10, 11 and 16 are independent. Reconsideration and further examination are respectfully requested.

Claims 1, 5 to 8, 10, 13 and 15 are rejected under 35 U.S.C. § 103 as being unpatentable over U.S. 2001/0013953 (Uekusa) in view of J.P. 9037092 (Shoji). Claims 11 and 16 are rejected under 35 U.S.C. § 103 as being unpatentable over Uekusa in view of U.S. 5,812,283 (Tachibana) in view of Shoji. Claims 12 and 14 are rejected under 35 U.S.C. § 103 as being unpatentable over Uekusa, Tachibana, Shoji and further in view of well known art. Claim 4 is rejected under 35 U.S.C. § 103 as being unpatentable over Uekusa in view of Shoji in further view of U.S. 6,980,326 (Tsuchiya). Reconsideration and withdrawal of these rejections is respectfully requested.

The present claims concern correcting compressed image data based on attributes extracted from the compressed image data either before or during decompression of the image data. In one aspect, a feature amount of the entire image data decompressed from JPEG-compressed image data is acquired using a histogram acquired from a DC component of a minimum coded unit, before execution of a first correction according to the feature amount and before execution of a second correction different from the first correction is completed for the entire image data. As the feature amount is acquired from the DC component obtained between the decompression of the JPEG-compressed image data, the feature amount is quickly extracted as compared with when the feature amount is extracted from image data completely restored from the JPEG-compressed image data. As a result, an image correction process applied to the entire image data decompressed from the JPEG-compressed image data may typically be more

efficiently executed and use a smaller amount of memory as opposed to other image correction processes.

Turning to specific claim language, amended independent Claim 1 is directed to an image processing apparatus which includes a corrector, arranged to apply, to image data stored in a band memory or a block memory assigned to a memory area, a first correction according to a feature amount of the entire image data, and a second correction which is different from the first correction; a processor, arranged to apply an image process required to print on a print medium to the image data output from said corrector; and a recorder, arranged to print an image on the print medium based on the image data output from the processor. The corrector acquires the feature amount from data of a representative value group of the image data stored in the memory area, and then releases the memory area storing the representative value group to reassign the released memory area to the band memory or the block memory, before execution of the first correction and before execution of the second correction is completed for the entire image data.

Applicants respectfully submit that the cited references, namely Uekusa and Shoji, considered either alone or in combination, fail to disclose or suggest all of the features of the apparatus of Claim 1. In particular, the cited references, either alone or in combination, fail to disclose or suggest at least the features of a corrector, arranged to apply, to image data stored in a band memory or a block memory assigned to a memory area, a first correction according to a feature amount of the entire image data, and a second correction which is different from the first correction, wherein the image data is decompressed from JPEG-compressed image data, and wherein said corrector acquires the feature amount using a histogram acquired from a DC component of a minimum coded unit before execution of the first correction and before execution of the second correction is completed for the entire image data, and wherein the

minimum coded unit includes the DC component and AC components which are obtained between the decompression of the JPEG-compressed image data.

Uekusa describes color balance correction as indicated in Figs. 12A to 12C. Fig. 12A indicates an ideal color solid, Fig. 12B indicates a color solid of input image data having a gray line shifted from a gray line of the ideal color solid (paragraph 0051), and Fig. 12C indicates a color solid of the image data on which the color balance correction is performed (paragraph 0053). Applicants submit that the gray line may be considered a feature amount of the image data; however, Uekusa does not disclose acquiring the gray line from a histogram acquired from a DC component of a minimum coded unit before execution of a first correction and before execution of a second correction is completed for the entire image data, and wherein the minimum coded unit includes the DC component and AC components which are obtained between the decompression of JPEG-compressed image data. As clearly indicated in Uekusa, the gray line is defined by determining highlight and shadow points, which define the gray line, of the input image data by generating a cumulative frequency histogram of RGB signals of the input image data (paragraph 0046). In other words, a system in accordance with the disclosures of Uekusa acquires the gray line as the feature amount from the entire image data and not from a histogram acquired from a DC component of a minimum coded unit as featured in the present claims.

Applicants have reviewed Shoji and submit that nothing in Shoji is found to cure that which is missing in Uekusa.

In light of these deficiencies of Uekusa and Shoji, Applicants submit that amended independent Claim 1 is now in condition for allowance and respectfully request same.

Independent Claims 8, 10, 11 and 16 are directed to a method, computer-readable medium, a printer and an inkjet printer, respectively, substantially in accordance with the apparatus of Claim 1. Accordingly, Applicants submit that Claims 8, 10, 11 and 16 are also now in condition for allowance and respectfully requests same.

The other pending claims in this application are each dependent from the independent claims discussed above and are therefore believed allowable for at least the same reasons. Because each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration of each dependent claim on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, the entire application is believed to be in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.